

Rock Odyssey

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Grades: 3-8

Time Frame: 6 class periods

Objective: To enable students to be aware of how the earth was formed, they will identify the three types of rocks found in their local environment.

Standards: MT Standards for Science

Content Standard 1 – Students, through the inquiry process, demonstrate the ability to design, conduct, evaluate, and communicate results and reasonable conclusions of scientific investigations.

Content Standard 4 – students, through the inquiry process, demonstrate the knowledge of the composition, structures, processes and interactions of Earth's systems and other objects in space.

MT Standard for Speaking and Listening

Content Standard 1 – Students demonstrate knowledge and understanding of the communication process.

Content Standard 3 – Students apply a range of skills and strategies to speaking and listening.

MT Standards for Technology

Content Standard 1 – Students demonstrate an understanding of the basic operations of technology.

Materials: Obtain a collection of the three types of rocks with labels, magnifying glasses, three large size tables, plastic shopping bags, rock identifying books (Field Guide to Rocks and Minerals), computers with internet access, poster boards, markers/crayons, pencils, paper.

Websites: <http://www.puzzle-maker.com/CW/>

<http://rockhounds.com/rockshop/rockkey/index.html>

<http://volcano.und.edu/vwdocs/vwlessons/lessons/Slideshow/Slideindex.html>

http://www.classzone.com/books/earth_science/terc/content/investigations/es0610/es0610page02.cfm

Vocabulary: Sedimentary Rock: Rocks found in the Earth's crust that form layer upon layer and contain minerals and organic materials (fossils).

Igneous Rock: Rocks found in the Earth's crust that are formed by cooling of magma or lava.

Metamorphic Rocks: Rocks found in the Earth's crust that are formed by intense heat and pressure over long periods of time.

Magma: Molten rock found in the mantle.

Lava: Molten rock that has emerged through the surface of the crust.

Crust: The upper most layer of Earth.

Mantle: The thickest layer of Earth that contains molten rock.

Activity:

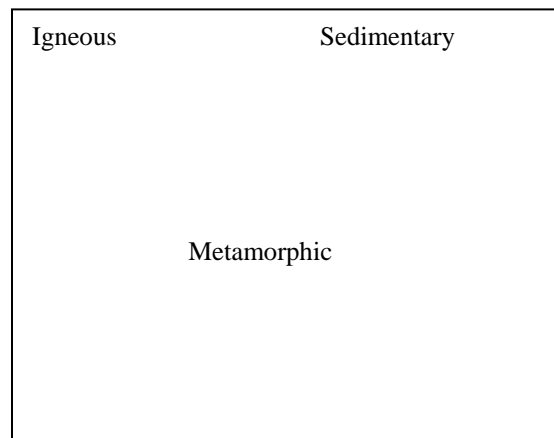
Day One: Teacher will introduce and discuss the vocabulary words. Teacher will then hand students a crossword worksheet to reinforce vocabulary they just learned (refer to website to make your own).

Day Two: Teacher will have the students observe teacher's collection of the different types of rocks. Rocks will be labeled for students to see the difference and each type will be on a separate table.

Day Three: Divide students into cooperative working groups of 4. Teacher will take the students on a rock walk to gather samples of rocks they find and place them in their bags. Rocks collected must be limited depending on your size of class. Rocks must also be fist size. Bring back to class and label the bags with group names.

Day Four: Groups should determine which of their rocks collected the previous day belong in which type of rock group. Students should use rock identifying books and the internet.

Day Five: After identifying all their rocks, students will make a detailed drawing on poster board of each rock under each type of rock.



Day Six: Students will present their finding to the class in a 5 minute presentation.

Extensions: Older students could take the identification a step further by finding the name of each type of rock. They could also get into the rock cycle. Younger students could keep a rock journal with pictures of rocks.

Assessment: Refer to Classy Grasses for Rubric on presentation.